

REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 1-8 are pending in this application. Claims 1, 4, 7 and 8 are amended to correct minor informalities noted in the Office Action. No new matter is presented.

In the Office Action, Claims 1, 3-4 and 6-8 were objected to because of minor informalities; and Claims 1-8 were rejected under 35 U.S.C. §103(a) as unpatentable over Yano et al. (U.S. Pat. 7,123,599, herein Yano) in view of Kinker et al. (U.S. Pub. 2003/0088671, herein Klinker).

Applicants appreciatively acknowledge the courtesy extended by Examiner Loo in holding a personal interview with the undersigned on July 8, 2008. During the interview an overview of the invention was presented, and the pending claims were discussed in view of the applied references. No formal agreement was reached during the interview pending a formal response to the outstanding Office Action.

In response to the objection to Claims 1, 3-4 and 6-8, Claims 1, 4, 7 and 8 are amended to correct the informalities noted in the Office Action. Accordingly, Applicants respectfully request that the objection to these claims be withdrawn.

Claims 1-8 were rejected under 35 U.S.C. §103(a) as unpatentable over Yano in view of Klinker. Applicants respectfully traverse this rejection, as independent Claims 1, 4, 7 and 8 recite novel features clearly not taught or rendered obvious by the applied references.

Claim 1 is directed to a mobility management node that creates paging areas based on the migration patterns of mobile stations. As described in an exemplary embodiment at p. 2-3 of the specification, instead of storing migrations histories and generating paging areas in mobile nodes (e.g., MN 21-23), the claimed configuration stores the migration histories and generates paging areas at a mobility management node (e.g., MAP 1). Such a configuration

results in the conservation of system resources, since the mobile nodes do not report migration histories to the mobility management node.

Claim 1, for example, is directed to a mobility management node comprising:

mobility management means for correlating a home address in a home network of a mobile node with a care-of (c/o) address in a network where the mobile node is located after movement;

binding storing means for storing the home address and the c/o address of the mobile node correlated with each other by the mobility management means;

transition detecting means for monitoring transition of the c/o address stored in the binding storing means, and for detecting a prefix of the c/o address before the transition and a prefix of the c/o address after the transition;

transition history storing means for storing a transition frequency of the c/o address in correlation with the prefix of the c/o address before the transition and the prefix of the c/o address after the transition detected by the transition detecting means;

paging area forming means for extracting predetermined combinations of the prefix of the c/o address before the transition with the prefix of the c/o address after the transition, stored by the transition history storing means, and for generating paging area information by a set of said prefixes included in the extracted combinations; and

paging area notifying means for notifying the mobile node of the paging area information generated by the paging area forming means.

Independent Claims 4, 7 and 8, while directed to alternative embodiments, recite similar features. Accordingly, the remarks and arguments presented below are applicable to each of independent Claims 1, 4, 7 and 8.

As noted above, the features recited in Claim 1 are features that are performed by a ***mobility management node***, and not the mobile node. As discussed below, Yano describes a mobile node that detects a transition and generates its own paging area, and fails to teach or suggest that the paging area is generated in a ***mobility management node*** (e.g., HA device) and notified to the mobile node, as claimed.

The Office Action cites Yano as disclosing Applicants' invention with the exception of the claimed "transition history storing means." The Office Action then cites Klinker as disclosing this claimed feature and asserts that it would have been obvious to one of ordinary skill in the art at the time of the invention to combine the cited references to arrive at

applicants' claims. Applicants respectfully traverse this rejection, as Yano fails to teach or suggest the claimed features for which it is relied upon as a primary reference under 35 U.S.C. §103.

Yano describes a mobile data communication system capable of shortening an interruption time of communication, the system includes an HA device 101, advertising routers 103, 113, 115, base stations 104, 112, 117, routers 106, and mobile terminal devices 105. When a mobile terminal receives radio waves from a plurality of base stations in the vicinity of a boundary between cells, the mobile terminal combines a plurality of received routing addresses by logical summation and registers a resultant routing address with the HA device.<sup>1</sup>

Therefore, Yano describes that the creation of a paging area is formed by a mobile station and not by a ***mobility management node***, as recited in Claim 1. As noted above, the claimed configuration places the burden on the ***mobility management node*** instead of the mobile station to form paging areas, thus reducing the signaling required to be transmitted from the mobile station to the mobility management node.

In rejecting the claimed features directed to the "mobility management means" and the "binding storing means" the Office Action relies on Fig. 6 and col. 9, ll. 22-44 of Yano. This cited portion of Yano describes that an example of a location management table of mobile terminals 105 included in the HA device 101. In Fig. 6, numeral 601 denotes a home address of the mobile terminal 105 in the home network 107, numeral 602 denotes a care-of address temporarily used by the mobile terminal 105 in the subnetwork 102 or 114 to which the mobile terminal 105 has moved. Thus, this cited portion of Yano describes how the care-of address and home address are correlated in the HA device 101 after being received from

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<sup>1</sup> Yano, Abstract.

the mobile stations. Therefore, the Office Action appears to consider that the HA device 101 is the claimed ***mobility management node*** in rejecting the features recited in Claim 1.

However, in rejecting the claimed features directed to the “transition detecting means” and “paging area forming means,” the Office Action then cites, *inter alia*, col. 3, ll. 54-63 and col. 10, ll. 14-29 of Yano. This cited portion of Yano describes that the mobile terminal includes a processing unit, and if a plurality of different subnetwork information pieces are received in the vicinity of a boundary between a plurality of cells respectively belonging to different subnetworks, the processing unit of the mobile unit combines a plurality of information pieces into one information piece that can be resolved and recognized later, in accordance with a predetermined rule, and conducts location registration of the synthesized information together with a care-of address in the HA device. Thus, the mobile station itself detects transitions between subnetworks and creates a “synthesized” care-of address (e.g., paging area) that is reported to the HA device.

Further, even if the mobile station of Yano were to be considered analogous to the claimed mobility management node, the mobile station does not “detect a prefix of the c/o address ***before the transition and*** a prefix of the c/o address ***after the transition... store a transition frequency*** of the c/o address in correlation with the prefix of the c/o address before the transition and the prefix of the c/o address after the transition ***detected... extract*** predetermined combinations of the prefix of the c/o address before the transition with the prefix of the c/o address after the transition, ***stored by the transition history storing means,*** and generate paging area information by a set of said prefixes included in the ***extracted combinations,***” as claimed. Instead, as noted above, the mobile station of Yano merely determines that it is receiving signals from a plurality of base stations, and reports this information to the HA device.

Claim 1 further recites that the ***mobility management node*** includes “a paging area notifying means for ***notifying the mobile node of the paging area information generated by the paging area forming means.***” In rejecting this feature, the Office Action relies again on col. 3, ll. 54-63 and col. 10, ll. 14-29 of Yano. However, as noted above, this cited portion of Yano is directed to generating a synthesized care-of address at the mobile station itself. Thus, the mobile station is not notified of the synthesized care-of address that is has already created for itself.

Therefore, the HA device in Yano does not perform the claimed “transition detecting” or “paging area forming” features recited in Claim 1. Instead, Yano describes that such processes are performed in the mobile stations. As noted above, the claimed invention is directed to a system in which all of the claimed features are performed in the ***mobility management node*** and not in the mobile node. Yano does not disclose such a configuration, and the interpretation in the Office Action that both the mobile station and the HA device may be somehow combined to reject the features directed to a single ***mobility management node*** fails to take into consideration all the language of the pending claims.

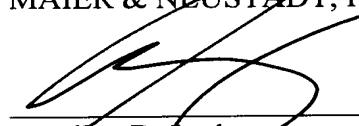
Further, Klinker describes a method for controlling routing of data over multiple networks, and fails to cure the above noted deficiencies of Yano.

Accordingly, Applicants respectfully request that the rejection of Claim 1 (and Claims 2-3, which depend therefrom) under 35 U.S.C. §103 be withdrawn. For substantially similar reasons, it is also submitted that independent Claims 4, 7 and 8 (and the claims that depend therefrom) patentably define over Yano and/or Klinker.

Consequently, in view of the present amendment and in light of the foregoing comments, it is respectfully submitted that the invention defined by Claims 1-8 patentably define over the applied references. The present application is therefore believed to be in condition for formal allowance and an early and favorable reconsideration of the application is therefore requested.

Respectfully submitted,

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